Remarks

Applicant respectfully requests that this Amendment After Final Action be admitted under 37 C.F.R. § 1.116.

Applicant submits that this Amendment presents claims in better form for consideration on appeal. Furthermore, applicant believes that consideration of this Amendment could lead to favorable action that would remove one or more issues for appeal.

No claims have been amended. No claims have been cancelled. Therefore, claims 21-40 are presented for examination.

Applicants acknowledge the allowance of claims 41-45

Claims 21, 22, 31 & 32 stand rejected under 35 U.S.C. §102 (e) as being anticipated by Hollander (U.S. Patent No. 6,347,388 B1). Applicants submit that the present claims are patentable over Hollander.

Hollander discloses a test generator module for automatically creating a device verification test from a functional description. See Hollander at Figure 1. The test generator can be constrained to generate tests for specific subsets of the design's functionality. Thus, some tests can focus on a specific feature in the design, while other tests can address broader functional scopes (col. 4, ll. 66 – col. 5, ll. 5).

In addition, data checks are performed to verify the relation among different data elements, or to verify data against a high level reference model. The generator can perform any combination of static and dynamic checks. When using both dynamic generation and dynamic checking, the test generator module and the checker can constantly synchronize. Thus, temporal checks can be precisely targeted (col. 5, ll. 18-25). Further, reports of functional coverage statistics at the architectural, module, or system levels are provided. Cross coverage reports can also be generated for later analysis (col. 5, ll. 30-40).

Claim 21 recites:

A method comprising:

generating a first test program to test the functionality of an integrated circuit (IC), the first test program including a test program population having a first set of instructions and data;

executing the first test program;

evaluating a first set of coverage data from the first test program to determine if the IC has been sufficiently tested, wherein evaluating the first set of coverage data comprises comparing the coverage data to a predetermined coverage requirement; and

generating a second program if the IC has not been sufficiently tested by the first test program, the second test program including an updated test program population having a second set of instructions and data being a mutation of the original population.

Applicant submits that nowhere in Hollander is there disclosed generating a second program including an updated test program population having a second set of instructions and data being a mutation of an original population. The Examiner asserts

> Prior art in figure 2, 235 and column 9 lines 7-10, shows additional tests being created by the test generator, in accordance with analyzer results, which also require additional inputs (population) by the user

See Final Office Action at page 5, paragraph 7.

Notwithstanding the Examiner's assertions, applicants submit that Hollander discloses results of tests being analyzed and presented as coverage reports. The test generator, in accordance with the results of this analysis, creates additional tests. Nevertheless, there is no disclosure of the additional tests having a second set of instructions and data being a mutation of an original population. Therefore, claim 21 is patentable over Hollander.

Claims 22-30 depend from claim 21 and include additional limitations. Therefore, claims 22-30 are also patentable over Hollander.

Claim 31 recites:

A computer system comprising:

a storage device coupled to a processor and having stored therein at least one routine, which when executed by the processor, causes the processor to generate data, the routine causing the processor to,

generate a first test program to test the functionality of an integrated circuit (IC), the first test program including a test program population having a first set of instructions and data;

execute the first test program;

evaluate a first set of coverage data from the first test program to determine if the IC has been sufficiently tested, wherein evaluating the first set of coverage data comprises comparing the coverage data to a predetermined coverage requirement; and

generate a second program if the IC has not been sufficiently tested by the first test program, the second test program including an updated test program population having a second set of instructions and data being a mutation of the original population.

For the reasons stated above with respect to claim 21, claim 31 is also patentable over Hollander. Since claims 32-40 depend from claim 31 and include additional limitations, claims 32-40 are also patentable over Hollander.

Claims 23, 24, 33 & 34 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hollander (U.S. Patent No. 6,347,388 B1) in view of Hayes (U.S. Patent No. 5,799,266). Applicants submit that the present claims are patentable over Hollander even in view of Hayes.

Hayes discloses a method and apparatus for designating sequences of interrelated test functions of software interfaces and specifying selected attribute values of the test functions' parameter attributes, and automatically generating from these designations/specifications. See Hayes at col. 2, ll. 19-25. A test driver generator is provided for generating test drivers. The test driver generator receives test expressions designating execution sequence of test functions of software interfaces and corresponding attribute value specifications for the designated test functions' parameter attributes. Each test expression designates a number of test functions to be executed in a certain sequence,

and each corresponding attribute value specification specifies selected attribute values of the test functions' parameter attributes.

For each test expression and corresponding attribute value specifications of a software interface, the test driver generator, in response, generates a test driver that can execute the specified test functions in the designated order with all combinations of the selected attribute values of the test functions' parameter attributes (col. 2, ll. 35-49). Further, a parser parses and tokenizes test function designations and attribute value specifications based on formal grammar. The intermediate representation builder builds a syntax tree. The code generator generates the test drivers using the syntax tree.

Nonetheless, Hayes does not disclose or suggest generating a second program including an updated test program population having a second set of instructions and data being a mutation of an original population. As described above, Hollander does not disclose or suggest such a limitation. Therefore, any combination of Hollander and Hayes would also not disclose or suggest generating a second program including an updated test program population having a second set of instructions and data being a mutation of an original population. Consequently, the present claims are patentable over any combination of Hollander and Hayes.

Claims 25-30 and 36-40 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Hollander (U.S. Patent No. 6,347,388 B1) in view of Hayes (U.S. Patent No. 5,799,266) and further in view of Miller et al (U.S. Patent No. 6,175,948 B1). Applicants submit that the present claims are patentable over Hollander and Hayes even in view of Miller.

Miller discloses a process wherein source code for a component is extracted from a database and parsed into an AST. However, Miller does not disclose or suggest generating a second program including an updated test program population having a second set of instructions and data being a mutation of an original population. As described above, Hollander and Hayes do not disclose or suggest such a limitation.

Therefore, any combination of Hollander, Hayes and Miller would also not disclose or suggest such a limitation. Accordingly, the present claims are patentable over any combination of Hollander, Hayes and Miller.

Applicants respectfully submit that the rejections have been overcome, and that the claims are in condition for allowance. Accordingly, applicants respectfully request the rejections be withdrawn and the claims be allowed.

The Examiner is requested to call the undersigned at (303) 740-1980 if there remains any issue with allowance of the case.

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,
BLAKELY, SOKOLOFF, TAYLOR & ZAFMAN LLP

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